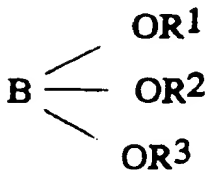
BASF Aktiengesellschaft October 2 1997

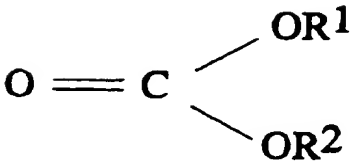
NAE19970541 G/Ri/TF

We claim:

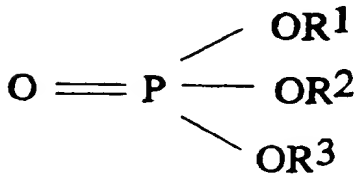
1. The use of at least one ester of the formula (I) to (V)



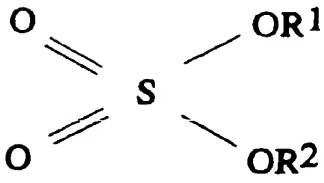
(I)



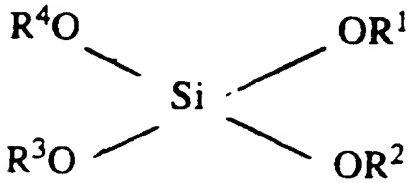
(II)



(III)



(IV)



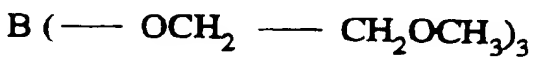
(V)

where R^1, R^2, R^3, R^4 are identical or different and each, independently of one another, are a linear or branched-chain C_1- to C_4-alkyl, $(-CH_2-CH_2-O)_n-CH_3$ with n = 1 to 3, a C_3- to C_6-cycloalkyl, an aromatic hydrocarbon group which in turn can be substituted, with the proviso that at least one of the groups R^1, R^2, R^3 or R^4 is $(-CH_2-CH_2-O)_n-CH_3$ with n = 1 to 3,

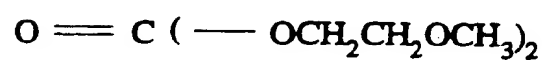
as a solvent in electrolyte systems for Li-ion storage cells.

2. The use as claimed in claim 1, wherein R^1, R^2 and, where present, R^3 are identical and are $-CH_2-CH_2-O-CH_3$ or $(-CH_2-CH_2-O)_2-CH_3$.

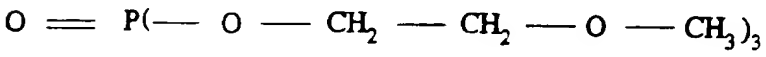
3. The use of at least one of the compounds of formulae (Ia) to (Va)



(Ia)

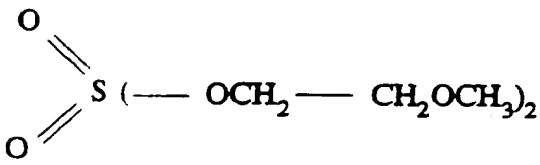


(IIa)



(IIIa)

and



(IVa)

$Si(-O-CH_2-CH_2-OCH_2)_4$ (Va)

as a solvent in electrolyte systems for Li-ion storage cells.

4. The use as claimed in any one of the preceding claims, wherein $LiPF_6$, $LiBF_4$, $LiClO_4$, $LiAsF_6$, $LiCF_3SO_3$, $LiC(CF_3SO_2)_3$, $LiN(CF_3SO_2)_2$, $LiN(SO_2F)_2$, $LiN(CF_3CF_2SO_2)_2$, $LiAlCl_4$, $LiSiF_6$, $LiSbF_6$ or mixtures of two or more thereof are employed as a conducting salt.

5. A composition comprising:

(A) at least one compound of formula (I) to (V) as defined in claim 1, and

(B) a conducting salt selected among:

$LiPF_6$, $LiBF_4$, $LiClO_4$, $LiAsF_6$, $LiCF_3SO_3$, $LiC(CF_3SO_2)_3$, $LiN(SO_2F)_2$, $LiN(CF_3SO_2)_2$, $LiN(CF_3CF_2SO_2)_2$, $LiAlCl_4$, $LiSiF_6$, LiSbF [sic] and a mixture of two or more thereof.

6. A composition as claimed in claim 5, wherein the compound (A) is selected among the compounds of formulae (Ia) to (Va), as defined in claim 3, and a mixture of two or more thereof, and the conducting salt (B) is $LiBF_4$.

7. An Li-ion storage cell comprising at least one ester as defined in any one of claims 1 to 3.

8. An Li-ion storage cell comprising a composition as claimed in claim 5 or 6.

9. The use of a composition as claimed in claim 5 or 6 as an electrolyte system in Li-ion storage cells.